

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

*Ex parte SELDA GUNSEL, CLIFFORD VENIER
and I-CHING CHIU*

Appeal No. 2005-1533
Application 09/534,282

ON BRIEF

Before KIMLIN, PAK and OWENS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 11-14 and 23-37, which are all of the pending claims.

THE INVENTION

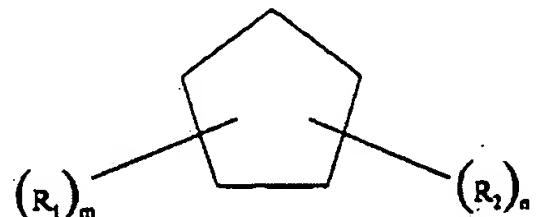
The appellants claim 1) a magnetic recording medium that includes a magnetic layer having thereon a specified hydrocarbyl substituted cyclopentane lubricant, 2) a data storage/retrieval device and a computer that contain the magnetic recording medium, 3) a method for manufacturing the magnetic recording medium, and 4) a magnetic head having thereon the specified hydrocarbyl substituted cyclopentane lubricant. Claim 1, which claims the magnetic recording medium, is illustrative:

1. A magnetic recording, comprising:

a non-magnetic support;

a magnetic layer formed on the support; and

a lubricant layer over the magnetic layer, the lubricant layer includes a hydrocarbyl-substituted cyclopentane as represented by the following formula:



wherein R_1 and R_2 are respectively a hydrocarbyl group, and m and n are respectively zero or a positive integer and the sum of $m+n$ is greater than zero; and

wherein the hydrocarbyl consists of carbon and hydrogen and wherein the hydrocarbyl substituted cyclopentane comprises at least 29 carbon atoms.

THE REFERENCES

Hayashi	4,566,983	Jan. 28, 1986
Venier et al. (Venier '023)	5,084,516	Apr. 30, 1991
Tsuchiya et al. (Tsuchiya)	5,084,516	Jan. 28, 1992
Ng	5,128,216	Jul. 7, 1992
Babb et al. (Babb)	5,364,547	Nov. 15, 1994
Patsidis et al. (Patsidis)	5,541,351	Jul. 30, 1996
Sanechika et al. (Sanechika)	5,547,593	Aug. 20, 1996
Stirnimann et al. (Stirnimann)	6,319,600	Nov. 20, 2001

(filed May 22, 1998)

C.G. Venier et al. (Venier article 1), "Tris(2-Octyldodecyl)-Cyclopentane, a Low Volatility, Wide Liquid-Range, Hydrocarbon Fluid" 13.1-1 to 13.1-12 (undated).¹

E.W. Casserly and C.G. Venier (Venier article 2), "Tribologically Relevant Properties of Multiply-Alkylated Cyclopentanes. The Design of a Hydrocarbon Molecule for Aerospace Applications", Symposium on the Chemistry of Lubricants and Lubrication Presented Before the Division of Petroleum Chemistry, Inc., American Chemical Society Boston Meeting, 35 Preprints #2, 265-71 (April 22-27, 1990).

¹ There is no dispute as to whether Vernier article 1 is prior art.

THE REJECTIONS

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 1, 11-14 and 23-35 over Stirnimann in view of Vernier '023, Vernier article 1 and Babb; claims 11 and 23 over Stirnimann in view of Vernier '023, Vernier article 1, Babb and Patsidis; claims 12 and 24 over Stirnimann in view of Vernier '023, Vernier article 1, Babb and Vernier article 2; and claims 36 and 37 over Stirnimann in view of Vernier '023, Vernier article 1, Babb and either 1) Sanechika and Ng or 2) Tsuchiya and Hayashi.

OPINION

We affirm the aforementioned rejections.

The appellants state that the claims stand or fall in six groups (brief, page 4). However, even though additional references are applied in the rejections of the claims in groups 2-6, the appellants rely upon the same argument regarding those groups as is set forth with respect to group 1 (brief, pages 11-16). Consequently, the claims stand or fall together and, accordingly, we limit our discussion to one claim, i.e., claim 1. *See In re Ochiai*, 71 F.3d 1565, 1566 n.2, 37 USPQ2d 1127, 1129 n.2 (Fed. Cir. 1995); 37 CFR § 1.192(c) (7) (1997).

Stirniman discloses a magnetic recording medium having thereon a high molecular weight fraction, terminally nonfunctional fluoropolyether lubricant topcoat (abstract; col. 4, lines 17-20 and 32-37).

Venier article 1 discloses that because tris(2-octyldodecyl)cyclopentane (which falls within the formula in the appellants' claim 1) has the desirable properties of lubricity, additive solvency and thermal stability, it is a viable alternative to perfluoropolyethers in aerospace applications (page 13.1-4).

Vernier '023 discloses that hydrocarbyl substituted cyclopentanes wherein the hydrocarbyl groups are alkyl groups having up to 36 carbon atoms are "useful as lubricants in internal combustion engines and in other areas where good lubricity is a requirement" (col. 4, lines 11-41; col. 7, lines 1-5).

Babb discloses poly(perfluorocyclobutane aryl ether) compounds that are useful as lubricants for magnetic media and in engines, particularly high temperature engines, and indicates that the engines include automotive and aeronautical engines (col. 1, lines 20-30; col. 2, lines 21-35).

The appellants argue that Babb discloses that his perfluorocyclobutane lubricants are useful for both engines and magnetic media, but does not disclose that all lubricants useful for engines are also useful for magnetic media (brief, page 7). Babb's exemplification of only one use of the lubricants other than lubricating engines, i.e., lubricating magnetic media, would have fairly suggested, to one of ordinary skill in the art, that the areas referred to by Venier '023 where hydrocarbyl substituted cyclopentanes are useful, other than lubricating engines (col. 7, lines 1-5), include lubricating magnetic media.

We therefore conclude that the appellants' claimed invention would have been *prima facie* obvious to one of ordinary skill in the art over the applied prior art.

The appellants argue that their specification includes evidence that their lubricants provide unexpected results (brief, pages 8-11; reply brief, pages 1-4). For the following reasons, the evidence of unexpected results relied upon by the appellants is not effective for overcoming the *prima facie* case of obviousness.

First, the appellants have not established that their evidence compares the claimed invention to the closest prior art.

See *In re Baxter Travenol Labs.*, 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991); *In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984). The appellants compare their lubricant to Z-DOL[®] (specification, page 34, table II) which, the appellants state, is a functionalized perfluoropolyether manufactured by Ausimont Montedison (specification, page 30, lines 9-10). The appellants, however, have not established that Z-DOL[®] is at least as close as the lubricants of Stirnimann and Babb to the appellants' lubricant.

Second, it is not enough for the appellants to show that the results for the appellants' invention and the comparative examples differ. The difference must be shown to be an unexpected difference. See *In re Freeman*, 474 F.2d 1318, 1324, 177 USPQ 139, 143 (CCPA 1973); *In re Klosak*, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972). The appellants argue that table II of their specification shows that compared to Z-DOL[®], their lubricant unexpectedly increases the cycle life of magnetic media by a factor of six (brief, page 11). Vernier article 1, however, discloses that the lubricant within claim 1 tested by the appellants, tris(2-octyldodecyl)cyclopentane, exhibits a wear

scar more than twice that of Fomblin® Z25 perfluoropolyether (page 13.1-4). The wear scar test appears to indicate the relative lubricity of the tested lubricants in any lubricant use. Hence, Vernier article 1 indicates that the higher number of cycles to failure of tris(2-octyldodecyl)cyclopentane relative to Z-DOL® perfluoropolyether would have been expected, rather than unexpected, by one of ordinary skill in the art. "Expected beneficial results are evidence of obviousness of a claimed invention, just as unexpected beneficial results are evidence of unobviousness." *In re Skoll*, 523 F.2d 1392, 1397, 187 USPQ 481, 484 (CCPA 1975); *In re Skoner*, 517 F.2d 947, 950, 186 USPQ 80, 82 (CCPA 1975); *In re Gershon*, 372 F.2d 535, 537, 152 USPQ 602, 604 (CCPA 1967).

Third, the evidence is not commensurate in scope with the appellants' claim 1. See *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983); *In re Clemens*, 622 F.2d 1029, 1035, 206 USPQ 289, 296 (CCPA 1980). The appellants' claim 1 encompasses every hydrocarbyl substituted cyclopentane having at least 29 carbon atoms, wherein each hydrocarbyl group consists of carbon and hydrogen, but the appellants tested only one specie, i.e., tris(2-octyldodecyl)cyclopentane. We find in the evidence of record no reasonable basis for concluding that the great

number of species encompassed by the appellants' claim 1 would behave as a class in the same manner as the particular species tested. See *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972); *In re Susi*, 440 F.2d 442, 445-46, 169 USPQ 423, 426 (CCPA 1971). The appellants argue that a narrower range of data can show unobviousness of a broader range recited in a claim (reply brief, pages 1-4). The appellants, however, have not provided a range of data but, rather, have tested only one species within a large genus. Moreover, the appellants' claim 1 encompasses any concentration of the hydrocarbyl substituted cyclopentane, and the appellants' table II shows that as the concentration decreases, the number of cycles to failure decreases. The appellants have not shown that the superior number of cycles to failure of tris(2-octyldodecyl)cyclopentane relative to Z-DOL[®] shown in table II is obtained at low concentrations of those lubricants.

DECISION

The rejections under 35 U.S.C. § 103 of claims 1, 11-14 and 23-35 over Stirnimann in view of Vernier '023, Vernier article 1 and Babb, claims 11 and 23 over Stirnimann in view of Vernier '023, Vernier article 1, Babb and Patsidis, claims 12 and 24 over Stirnimann in view of Vernier '023, Vernier article 1,

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Babb and Vernier article 2, and claims 36 and 37 over Stirniman in view of Vernier '023, Vernier article 1, Babb and either 1) Sanechika and Ng or 2) Tsuchiya and Hayashi, are affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv).

AFFIRMED

<i>Edward C. Kimlin</i> EDWARD C. KIMLIN Administrative Patent Judge)
<i>Chung K. Pak</i> CHUNG K. PAK Administrative Patent Judge)))))
<i>Terry J. Owens</i> TERRY J. OWENS Administrative Patent Judge)))

TJO/ki

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